Assessing Designated Use Support

- MDEQ data – targeted and probabilistic
- Fish consumption advisories
- Extreme events (fish kills, chemical spills)
- Surface/drinking/source water data (SDWA)
- Trend analyses and predictive model
- Data from other agencies & public

Data Considerations

- Quality
- Quantity
- Representative
- Duration/frequency
- Mitigating/contextual information
- Compliance data generally not used for attainment decisions
- Few absolutes; incorporate flexibility/BPJ

Designated Use Determination

- Consider biological, chemical/physical, habitat, toxicology, and pathogen data
- Independent applicability (consistent with EPA guidance)
- A parameter may be used to support determination for more than one designated use
- Decisions: supporting, not supporting, insufficient information, not assessed

Designated Use Determination (cont)

- Chemical/physical/pathogen criteria are in law
- Generally require 4 data points within a year for chemical samples, unless contextual information indicates otherwise
- Biological data are narrative standards based on multi-metric indices
- One biological assessment usually adequate for attainment determination

Designated Uses

- Assume agriculture, navigation, & industrial water supply uses are met
- Warm-water/cold-water fishery
  - dissolved oxygen
  - temperature
  - ammonia (unionized)
  - pH
  - fish community
  - cisco presence (cold-water lakes)

Designated Uses

- Other indigenous aquatic life and wildlife
  - nutrient & toxics concentrations in water
  - Carlson Trophic Index (inland lakes)
  - Benthic macroinvertebrate community
  - Site-specific visual observations (algae, bacteria, macrophytes, fungi)

Designated Uses

- Partial/total body contact recreation
  - *E. coli*
  - untreated sewage/CSOs
  - public interest in listing due to shoreline deposits of muck/algae/aesthetics

Designated Uses

- Fish consumption
  - chemical concentrations in water (Hg, BCCs)
  - fish tissue concentrations (Hg, BCCs)
- Public water supply
  - toxic substances in water
  - taste and odor complaints

Independent Applicability - Advantages

- More protective
- Considers all designated uses (not just aquatic life)
- Perhaps less controversial (clear-cut decisions)
- Stimulates broad-based monitoring

Independent Applicability - Disadvantages

- Less flexibility
- Inability to account for site-specific criteria
- Water quality criteria can become outdated
- May be overly protective
  - waste resources on TMDL development
  - economic impacts